**SOFTWARE REQUIREMENT SPECIFICATION**

**STUDENT RESULT MANAGEMENT SYSTEM**

Submitted by **CSE – F** (**Group -1**)

M. R. M. Sitha Rama Reddy – AP19110010363

B. Sridhar – AP19110010447

M. Chandrahas – AP19110010536

**Guided By**

Prof. Arnab Mitra.

**Table of Contents**:

1. **Introduction-------------------------------------------------------------------------------03**
   1. Purpose……………………………………………………………………………………………….03
   2. Scope…………………………………………………………………………………………………..04
   3. Definitions, Acronyms, Abbreviations………………………………………………….04
   4. References…………………………………………………………………………………………..04
   5. Overview…………………………………………………………………………………………..…04
2. **The Overall Description----------------------------------------------------------------05**
   1. Product Perspective…………………………………………………………………………….05
   2. Product Functions……………………………………………………………………………….05
   3. User Characteristics…………………………………………………………………………….06
   4. Constraints………………………………………………………………………………………….06
   5. Assumptions and Dependencies………………………………………………………….06
3. **External interface Requirements----------------------------------------------------07** 
   1. User Interfaces
   2. Hardware Interfaces………………………………………………………………………………..08
   3. Software Interfaces………………………………………………………………………………….09
4. **System Features-------------------------------------------------------------------------09**
5. **Other Non-Functional Requirements-----------------------------------------------10**

5.1 **Performance Requirements…………………………………………………………………10**

5.1.1 Capacity……………………………………………………………………………………………….10

5.1.2 Database maintenance………………………………………………………………………..10

5.1.3 Multiple user maintenance………………………………………………………………….11

5.1.4 Quality…………………………………………………………………………………………………11

5.2 **Software System Attributes----------------------------------------------------------11**

5.2.1 Safety requirements…………………………………………………………………………....11

5.2.2 Security requirements………………………………………………………………………….11

5.3 **Business Rules……………………………………………………………………………………..11**

1. **Other Requirements---------------------------------------------------------------------12**
2. **Introduction**:

The Student Result Management System is the software in which every institution is maintaining logs of data of the student’s performance in every attempt of the exam. This software is a flexible to every student who ever them to access. It has the separate view of access for the admins and teachers.

* 1. **Purpose**:

This specification document describes the capabilities that will be provided by the software application STUDENT RESULT MANAGEMENT SYSTEM .It also states the various constraints by which the system will abide. The intended audience for this document is the development team, testing team and end users of the product.

The main objective of this project is to deal with the HMS in an easy and efficient manner. This document is mainly intended for the following group of people:-

1. We as developers for the purpose of maintenance and new releases of the software.

2. End users who want to book a hostel room online.

3. Admin who can maintain the bookings.

* 1. **Scope**:

The application will manage the information about various students enrolled in this course in different years, the subjects offered during different semesters of the course, the marks obtained by the various students in various subjects in different semesters. The application will greatly simplify and speed up the result preparation and management process.

**1.3 Definitions, Acronyms, and Abbreviations:**

• SRS ­ Software Requirement Specification

• IEEE ­ the Institute of Electrical and Electronics Engineers

• DFD ­ Data Flow Diagram

• DB ­ Database

• OS ­ Operating System

* 1. **References**

• IEEE 830­1998 standard for writing SRS document.

• Wikipedia

• Software engineering by KK Agrawal

• Software engineering by Roger S. Pressman

* 1. **Overview**:

Student’s information is stored in MySQL the authority is given to Administrator; he gives the permission to instructor to enter the department data and student information. The security is providing by giving password to each instructor.

1. **The Overall Description**:

In this section of the SRS it will get a crisp idea of the general factors that would affect the product and its requirements.

* 1. **Product Perspective**:
* In Student Result Management System is a concept derived from the management information system, it is a unique attempt to give a perspective result to the student with the conducted exams by the management.
* Student Result Management System is software which is used to login and check the results issued by the management (admin).
* This software allows the students to register the exams without any manual intervention like they can book for there exams from anywhere in the world.
* This software application will be in the window based, self-reliant and independent software product.
  1. **Product Functions**:
* With this software the admin can access the information of the students.
* This software contains of mainly 2 interfaces i.e., ADMIN (from College Management), USERS (Students & Teachers).
* In ADMIN page it consists of admin name, password to login.
* This web portal contains a home page with Username and Password buttons along with CAPTCHA button for the USERS. While if the USER has no account or he/she is new then he/she can click on create an account button.
* Then the page refreshes to the form and after filling the form and clicking on the register button creates a new account and then after the user can login with their details.
* After logging in into their respective accounts, USERS (Students) can check their results with the grade in their subjects. But still the USERS (Teachers) can access the students results like they can edit, delete, remain the results.
* And all these details will be viewed by the admin.
* USERS can also check if his/her results are successfully published or not in their portal.
* On for further confirmation by clicking the button OK then can get the certificate of their Performance.
  1. **User Characteristics**:
* ADMIN: Admin needs to login his/her account and then he can view/add/ update/delete users’ details. USERS (Teachers) can submit the student’s result secured in each course and their final grade in the portal and all this information is viewed and monitored by the admin.
* If Admin’s approve the application then the USERS can get to access their results.
* Users: Users need to create an account and then need to login to their portal. Users after going through the academic section, they can view a button called Exam Results. And the students can access their results but clicking that button.
  1. **Constraints**:
* There will be only one admin who can manage the activities of USERS.
* USERS at with in the university will have to implement a security policy to safeguard the marks related information being modified by unauthorized users.
* If all the USERS (Students) details like there username, password, captcha entered are correct then only they can view there result.
* One USER (Student) can able to access to one result.
* The database should be used as PHP or MySQL.
  1. **Assumptions and Declarations**:
* The No. of subjects to be taken by the student in each semester does not change.
* The subject types do not change whether it is OE, Core, Technical etc.,
* The number in which the USER (Student) Pursuing the semester do not change.
* The USERS must have sufficient knowledge of computers.
* The USERS must know some of the English language, as the user interface will be provided in English.
* The USERS will be having a username and a password to access their accounts.
* Creating a database in a safe and secretive & Possessive way which prevents any inside or outside attacks.
* Another constraint relating to the operating environment is that we are specific to PHP Database.
* And one more thing to be assumed here is as the USERS go on increases the package of the Database must be redirected to increase.

1. **External interface Requirements** 
   1. **User Interfaces**

The user interface requirements of this project are to make a user-friendly interface that is very fast, flexible, less error-prone, backup data, and it needs to be interactive in every service that is provided.

The user interface must be secure, convenient and extensible. Security requirements include the need to protect authorization information from unauthorized access.

The User - interface which is provided is a menu driven and one of the following screens will be provided:

* **Login screen**: This will be the first screen that will be displayed. It allows user to access different screens based upon the user role (ADMIN or USERS). Various fields are available on this screen will be
  + **Username**: Alphanumeric of length up to 10char.
  + **Password**: Alphanumeric of length up to 10char
  + **Designation**: ADMIN (College Administrator, Data Entry Operator, Website Engineer) or USERS (Students, Teachers).
* **Subject info Parameter Screen**: This screen will be accessible only to the Administrator (ADMIN). It will allow the user to enter the current semester number and the batch year of the student for which the USER wants to access the subject information.
* **Student Information Screen**: This screen will be accessible only to the Administrator (ADMIN). It will allow the user to modify the information about new/existing student for particular batch year.
* Some of the various fields available on these screen are:
* **Student Admission Number**: The format will be of AP19XXXXXXXXX where 19 represent the batch year Student.
* **Student Name**: Alphabetical Letters of length 50 characters.
* **Batch Year**: It will be the format AP19 In the year wise.
* **Marks Entry Parameter Screen**: This screen will be accessible only to the Teacher. It will allow the user to enter the Batch Year, the semester number and the subject for which the user wants to access the marks information.
* **Marks entry screen**: This screen will be accessible only to the Teacher. It will allow the user to add/modify/delete information about the marks obtained in the selected subject by different students. It includes Student enrollment no, student name, internal marks, external marks, total marks.
  1. **Hardware Interface Requirements**

There are various hardware specifications that can be fulfilled to run this application successfully.

* The requirements are as follows:-
* A Laptop or A computer with the processor of our system needs to be minimum of octacore i5 with 7th Generation or greater.
* RAM needs to be a minimum of 512 MB to get better performance.
* Hard disk depends on the data we stored of a minimum of 1GB.
* Screen resolution of at least 700X600-required for proper and complete viewing of screens.
* Keyboard and mouse.
  1. **Software Interfaces Requirements**

The various software specifications need to be fulfilled to run this application successfully.

The requirements are as follows:-

* For the frontend JAVA is used.
* For backend PhpMyAdmin is used.
* Eclipse IDE is used for writing and executing the code.
* The database used to keep a record of user accounts shall be Xampp.
* And we use the apache tomcat as the server.

1. **System Features**:

**Remote Result checking and Student result management:**

* **ADMIN:**

Using this module the admin allocates the result to the users and can view/update/delete all the details of the result of the student. Admin can also assign semester and batch numbers of result to each user individually.

* **USERS**:

In the user module, the teachers can access the student result and they can also view/update the result of the student.

After completing the account he/she can log in by using the details like username and password. And then he can view for the result which is been posted in the portal. After he/she checking the result they can simply logout form the portal.

* **Validity Checks**:

If the user wants to access the application, he/she needs to enter the correct details on the log-in page. If not, they will get a message that they entered the invalid details. If the user enters mobile no greater than 10 digits it will result in error and will not record data. If the user tries to login without signup, then he will be shown a dialog box as invalid details and will be redirected to signup page. Also, admin will be able to login only if he/she enters the correct id and password. Otherwise he/she will be shown an ‘invalid details’ dialogue box.

* **Error Handling/ Response to Abnormal Situations**:

If any validation does not occur properly they get the message that the given details are not valid and help the user.

For example, In case of user login page, if the user tries to login directly without signup or gives invalid details while logging in, then we get an error message stating that the provided details are wrong.

1. **Other Non-Functional Requirements** 
   1. **Performance Requirements**

Here are some of the listed performance requirements in the given below:

* + 1. **Capacity**

The Student Result Management System will provide the service of 24 hours.

* + 1. **Database Maintenance**

1. The database needs to be very dynamic in order to store the details of the application.

2. The database needs to maintain the details of the users and need to read the details at the time of the signup

3. So, a database should be maintained where the admin can store thousands of records.

The following information will be placed in Database:

1) **Subject info**: Subject Name, Subject Code, Semester.

2) **Student Info**: Student Enrollment Number, Student name, batch year.

3) **Marks info**: Student Enrollment number, Semester, internal marks in each subject, external marks in each subject

4) **User Account Info**: Username, User Id, password, Admission Number

* + 1. **Multiple user maintenance**

Our software needs to manage multiple users at the same time where they can use the application simultaneously, so we need to use the dynamic server to provide it.

* + 1. **Quality**

The primary objective of our SRMS is to produce quality software. As the quality of a piece of software is difficult to measure, consistency will be used to judge the software quality.

**5.2 Software System Attributes**

**5.2.1 Safety requirements**

During the time of using the application, it may crash due to some virus or operating system failure. The safety of the data in the application is very important because right from the login to making the payment we take the data and take the actions respectively so the data is protected.

**5.2.2 Security requirements**

Some of the factors that we found in order to provide the security for the software from accidental or malicious access, use, modification, or destruction are described below:-

1) Restricting access to modify, use, or adding the data to certain groups. Like in our application only the admin can add the room number and only he can modify the details. And the user data can be accessed only by that particular user.

2) User’s data filled in the registration form can be accessed only by the admin because the information needs to be hidden and is sensitive.

* 1. **Business Rules**

The business rules for the software are as follows:

* The Admin has the authority to fix the rules and regulations and to set or update the details as and when required.
* Providing room details to only those who have paid a fee and provided correct details.
* Incase if the user is unable to fill the registration form in his portal, he/she can directly navigate to queries page and make a call or mail to that person. Then the admin can add address that issue and add the details of the user in the database and assign him/her a room.

1. **Other Requirements**:

None